

# **NUTRITION SURVEY REPORT KANSADERE DISTRICT**

**BAY REGION  
SOMALIA**

October 2001

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## **ACKNOWLEDGEMENTS**

UNICEF is grateful to IMC for its collaboration and contribution to the survey from planning to implementation including training of field staff, supervision of fieldwork and a provision of vehicles for the fieldwork. Further, the fieldwork could not be carried out without the contribution and collaboration from local authorities and FSAU.

The data could not have been obtained without the co-operation and support of the communities surveyed especially the mothers and caregivers that had to take time off their busy schedules to respond to the interviewers.

## **EXECUTIVE SUMMARY**

In October 2001, UNICEF conducted a nutrition survey in Kansadere District, Bay Region in South and Central Somalia in collaboration with IMC, FSAU and local authorities. The survey was conducted in response to the emerging concern in the district over the drought. Assessments conducted in the area by UNICEF, FSAU and other agencies in July and August 2001 highlighted that successive crop failure due to lack of adequate rain, which made the situation beyond the level of the area's coping mechanism. This forced the population to migrate from rural villages to main towns in search of food and water. Health facilities had also reported an increase in the number of malnourished children in the area.

The main objective of the survey was to determine the level of wasting and oedematous malnutrition among children below five years, and some possible factors that may have been contributing to child malnutrition in the district.

Using the two-stage random cluster sampling methodology, a total of 900 children between age 6-59 months or measuring 65-110 cm were examined. Nutritional status assessments were based on weight and height measurements. Moreover, information relating to diarrhoea, ARI, Malaria incidence two weeks prior to the survey and Measles incidence one month prior to the survey, Vitamin A supplementation and measles vaccination status of the children were also collected. Qualitative information was also collected prior to the field work with some key informants and a group of mothers on issues relating to household food security and childcare practices in order to gain understanding on local factors affecting nutrition in the district.

### **Nutrition**

The preliminary report on anthropometric analysis, background information and qualitative information provided by the key informants were examined by UNICEF. Wasting of muscle and fat tissues, a rapid response to acute nutritional deficiency caused by infections and dietary inadequacies was found in more than 18% of children with 3% severely malnourished.

### **Immunization**

Information collected on immunisation status during the survey indicated that 26% of the children had been vaccinated against measles, out of which 70% were vaccinated within the past 6 months and 30% before the past 6 months, while 74% of children surveyed were not vaccinated at all. Moreover, results revealed that 60% of the children were provided with Vitamin A supplements during the past six months.

### **Child diseases and caring practices**

From the results it appears that child diseases is a major area of concern. In fact, mothers and caretakers were asked if the child was sick during the two weeks prior to the survey. It appears that 26% of children had diarrhoea, 26% had ARI and 30% had Malaria while almost other 6% had measles one month prior to the survey. Food other than milk was introduced before four months to almost 96% of children. Nine percent of the children were from households headed by females.

### **Water and environmental sanitation**

Limited access to improved water, inadequate utilisation of existing health services and poor child-feeding practices seem to be contributing substantially to malnutrition in Kansadere district. Replication of UNICEF and WFP nutrition interventions in Bakool region and establishment of health services in Ufurow area until the next harvest will prevent massive displacements in the area. Introduction of UNICEF/WFP pilot project in food distribution to malnourished families is expected to promote the recovery of some of the children already malnourished.

## 1. SUMMARY OF FINDINGS

Indicator	Number	Percentage
Under five children screened during the survey.	907	100
Number of boys in the sample	485	53.5
Number of girls in the sample	422	46.5
Number of children from farming food economy group	331	36.5
Number of children from agro-pastoral food economy group	486	53.6
Number of children from urban food economy group	90	9.9
Global acute malnutrition according to Weight For Height Index in Z-Score or presence of oedema	167	18.4
Severe acute malnutrition according to Weight For Height Index in Z-Score or presence of oedema	27	3.0
Global acute malnutrition according to Weight For Height Median or presence of oedema	127	14.0
Severe acute malnutrition according to Weight For Height in % Median or presence of oedema	25	2.8
Global acute malnutrition according to Weight For Height Index in Z-score or presence of oedema in farming food economy group.	61	18.4
Severe acute malnutrition according to Weight For Height Index in Z-score or presence of oedema in farming food economy group.	9	2.7
Global acute malnutrition according to Weight For Height Index in Z-score or presence of oedema in Livestock and agro-pastoral food economy group.	92	18.9
Severe acute malnutrition according to Weight For Height Index in Z-score or presence of oedema in Livestock and agro-pastoral food economy group.	<b>16</b>	<b>3.3</b>
Global acute malnutrition according to Weight For Height Index in Z-score or presence of oedema in urban food economy group.	14	15.5
Severe acute malnutrition according to Weight For Height Index in Z-score or presence of oedema in urban food economy group.	2	2.2
Proportion of children with diarrhoea in two weeks prior to the survey.	238	26
Proportion of children with ARI in two weeks prior to the survey.	237	26
Proportion of children with Malaria in two weeks prior to the survey.	268	29.5
Proportion of children with Measles in one month prior to the survey.	51	5.6
Proportion of children supplemented with Vitamin A in six months prior to the survey.	541	59.6
Proportion of children immunised against Measles.	238	26
Proportion of children on breastfeeding	262	28.8
Proportion of children breastfed less than 6 months	15	2.4
Proportion of children breastfed 6-11 months	28	4.4
Proportion of children breastfed 12-18 months	193	30.4
Proportion of children breastfed 18 months and more	399	62.8
Proportion of children introduced food before 4 months	869	95.8
Proportion of children introduced food during 4-6 months	34	3.7
Proportion of children introduced food after 6 months of age	4	0.4
Proportion of children fed once a day	20	2.2
Proportion of children fed twice a day	167	18.4

Proportion of children fed 3-4 times a day	523	57.7
Proportion of children fed more than 4 times/day	197	21.7
Proportion of female-headed households.	50	9
Proportion of displaced households	2	0.2
Proportion of returnee/refugee households	0	0
<b>Reason of displacement</b>		
Food shortage	1	50
Water shortage	1	50
<b>TWO MAIN SOURCE OF FOOD</b>		
Household crop production	502	90.6
Purchases	34	6.1
<b>Two main source of income</b>		
Sale of crops	383	69.3
Casual work	120	21.6
<b>Two main coping strategies during food shortage</b>		
Casual work	274	49.5
Sale of more livestock	137	24.7
<b>Two main source of drinking water</b>		
Open hand dug well	248	44.8
Borewell	188	33.9
<b>Main practice of human excreta disposal</b>		
Bush/Open ground	469	84.7
<b>Main source of treatment when a child is sick</b>		
Private clinic and pharmacy	284	51.4
Public health facility	128	23.1

## 2. INTRODUCTION

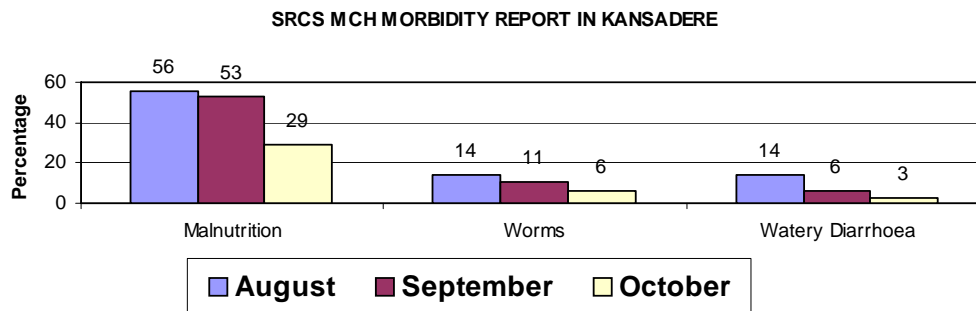
Kansadere District is situated in Bay Region of Somalia. Bay Region is the leading producer of sorghum in the whole of Somalia. The region consists of high potential sorghum producers accounting for about 45% of their livelihood (mainly in Baidoa, Burhakaba and Kansadere Districts), followed closely by agro-pastoral livelihood accounting for about 38%, mainly in Baidoa, Dinsor and Kansadere. There is high dependence on cereals (mainly sorghum) and animal products (milk) for majority of Bay residents.

Kansadere district is dominated by agro-pastoral community with about 50% of the population being in the Bay-Bay high potential sorghum, cattle and camel producing zone and about 40% in being Southern agro-pastoral area with less potential for food production. About 9% are pastoral community rearing camels and shoats while about 1% are (pastoralists) rearing camels and shoats.

### Health context

From 1994 to present, UNICEF supported IMC in a mobile EPI services equipped with cold chain and 17 health posts and SRCS in static EPI services in SRCS MCH while support to Ufurow Committee was discontinued after one years assistance from July 1999 including supplementary food distribution to malnourished children. UNICEF introduced supplementary food distribution at SRCS MCH beginning of 2000.

Between the two month period of August–October 2001, the total number of beneficiaries at the MCH increased from 320 to 898. This increase in August is suspected to be due to the population movement from rural areas in search of food and water took place during the period. As shown in the morbidity reports from the MCH below, the percentage of three major cases seen in the MCH, malnutrition, watery diarrhoea and worms decreased due to increased caseload in the MCH although the number of malnourished children seen in the MCH increased from 179 in August to 257 in October.



### Water and Environmental Sanitation Context

Kansadere district has more than five borewells functioning. However, the severe drought in Kansadere and the neighbouring districts that resulted from inadequate rains leaving the water ponds, main source of water dried put pressure on the existing water facilities. Water points are overcrowded by livestock, creating an increased pressure on the limited water supply. The worst affected area was Ufurow which claims a separate district but the survey covered in the same field work.

## Food Security Context

The district was food secure in the year 2000 following good harvests in both Deyr and Gu, 2000. However, poor rains in terms of amount and distribution caused poor Gu harvest for 2001. The drought extended throughout Jilaal and Gu seasons for 2001. Insufficient rains during the Gu season caused poor crop germination and performance, as well as insect (cricket) infestation with resultant poor harvest. The poor rains also led to severe water shortage in the district and depletion of pastures. This triggered movement of livestock to Lower/ Middle Juba areas, where pastures for animals were available. There was population concentration into major urban centers, which have reliable water points and job opportunities, as some household members left the district in search of alternative livelihood.

Food prices, particularly of local cereals, in normal years are relatively low in Kansadere as the district is a major producer. However, since late 2000, inflation has led to increase in food prices, particularly on the imported foods. Slight increase in prices of locally produced foods has also been reported thus greatly affecting food access in many poor households, some of whom had exhausted their food stock by the end of Gu season. The income of the poor greatly reduced in the last Gu due to lack of farm labour opportunities.

Reduced milk and other animal source protein in the district was experienced during the Jilaal, Gu and Haggar seasons for 2001.

**Table 1: Main events affecting food security in Kansadere district**

Period	Major event
June–August 2001	Severe water shortage and reduced income following poor Gu crop performance as a result of poor rains. Triggered population and livestock movement
July 2001	Increased insecurity in parts of the district
Early 2000	Commencement of food for work by CARE Somalia in the district
July-Aug 2000	Good Gu harvest for sorghum
May-June 2000	Increased availability of milk and green vegetables. Cereal prices slightly increased
July-Aug 1999	Extreme food insecurity: Poor crop harvest due to drought. Tension and insecurity hampered food availability and accessibility in the market.
June 1999	District taken over by Rehawein Resistance Army- improvement of security
July-Aug 1998	Lowest crop harvest in 6 years (also affected the other districts in the region)
1994-1995	Good harvests received

**Sources:** Extracted from previous FSAU's food security assessment and UNICEF reports.

### 3. JUSTIFICATION FOR THE NUTRITION SURVEY

In July and August 2001, UNICEF, FSAU, WFP and IMC reported Rabdure and Kansadere districts are in very high level of food insecurity. The cumulative effect of the El-nino floods, inter-clan conflicts followed after three years of consecutive crop failure predisposed communities to high food insecurity risks. Market price of Sorghum increased from 6000 SSh to 8,000 SSh per "Sous" (3kg). And there was exceptional increase in consumption of wild food. The people in rural villages were displaced to main urban towns putting pressure on existing health facilities. Morbidity reports from the health facilities indicated increasing levels of malnutrition. Taking these into consideration, UNICEF and IMC decided to carry out a comprehensive/stand-alone nutrition survey to better assess and analyse the situation of child nutrition in the district.



#### **4. SURVEY OBJECTIVES**

- To determine the level of malnutrition and oedema among under five in Kansadere district.
- To estimate the incidence of diarrhoea, Malaria and ARI diseases in the two weeks prior to the survey.
- To estimate the incidence of measles during the one month prior to the survey.
- To estimate the coverage of measles vaccination and Vitamin A supplementation in Kansadere district during the 6 month period prior to the survey.
- To determine the extent of household movements in Kansadere district.
- To estimate the proportion of female-headed households.
- To make comparison of the situation between different groups of families living in Kansadere town (i.e. those farming and others who are mainly farming and livestock).
- To gather background information on household food sources, income and coping mechanisms.
- To assess general feeding and weaning practices in Kansadere district.

#### **5. METHODOLOGY**

##### **Sample size calculation**

The target population was children 6-59 months (or heights between 65 – 110cm). In order to provide valid estimates of the prevalence of malnutrition in children with a 95% confidence, a minimum of 900 children were to be examined, with 30 children to be randomly selected from each of 30 clusters.

##### **Sampling methodology**

A two-stage cluster sampling methodology was used. A list of villages with population estimates for all villages in Kansadere district was obtained from the NIDs Secretariat in SCZ. A table of cumulative population and attributed numbers was developed, and clusters selected based on population proportional to size. The sampling interval was determined by dividing the total population by 30. The calculated cluster interval was 3,347 (See Annex 1). A random number selected within the cluster interval was used to determine the location of the first cluster. The next and subsequent clusters were determined by adding the cluster interval to the preceding random number selected. A total of 1 clusters were from Kansadere and 2 from Ufurow towns and 27 clusters were from villages.

The second stage of sampling was carried out in the cluster to select the first and subsequent households. Each team went to the middle of the cluster assigned guided by survey guides selected from the community, and determined a random direction by spinning a pencil. All households along the direction selected to the border of the cluster were counted and assigned numbers on a piece of paper. The survey guide randomly selected the first household to be visited from among those numbers. Subsequent households were selected on the basis of proximity following a clockwise direction. All eligible children in each household visited were measured and

weighed. If a caregiver or child was absent an appointment was made and the household revisited until the child was examined.

A total of 907 children were examined for weight for height. Their caregivers were interviewed as to whether the children had received Vitamin A or Measles vaccination in the past 6 months, or had suffered from diarrhoea or ARI diseases two weeks prior to the survey.

Five teams were used to collect the data. Each team had two enumerators, one supervisor and a survey guide. Enumerators were selected based on their experience with previous nutrition surveys. Local authority in Kansadere and Ufurow districts assisted in the identification of qualified persons. Enumerators were given a three-day training in anthropometric techniques, sampling techniques and how to complete survey questionnaires including one day of field practice in Baidoa town.

### **Variables examined**

**Age** – Only children between 6-59 months were selected for examination. The age of a child was determined from the mother/caregiver's recall, the under fives card, or from a local events calendar (*See Annex 2*) when the birth date was not stated.

**Weight** – UNICEFF electronic scales were used to weigh children to the nearest 0.1 kg or 100g.

**Height** – Children were measured barefooted and bareheaded using height measuring boards graduated to the nearest 0.5cm. Children with height < 85 cm were measured lying, while those equal to or >85 cm were measured standing.

**Oedema** – Children were examined for the presence of bilateral pedal oedema. The occurrence of pitting as a result of thumb pressure on the foot or leg for 3 seconds was indicative of nutritional oedema.

**Diarrhoea** – Mothers/caregivers were interviewed regarding any episode of three or more loose, watery stools in a day, within the preceding two weeks.

**Acute Respiratory Infections (ARI)** – collected from interviewing the mother and caregiver whether the child had “*oof wareen or wareento*” (local term of pneumonia) two weeks prior to the survey. This term was validated by further asking if the child had cough, fever and rapid breathing.

**Malaria**– collected from interviewing the mother/caregiver whether the child had malaria two weeks prior to the survey.

**Measles immunisation status** – the information was either provided by the mother or recorded from the child's vaccination card.

**Measles prevalence**– collected from interviewing the mother/caregiver whether the child had measles in one month period prior to the survey.

**Vitamin A supplementation** - the information was collected from interviewing the mother or recorded from the child's vaccination card.

**Residential status** – In all households visited, the mother/caregiver was asked whether they were originally resident from the village/town, or if they were displaced from elsewhere.

Sex of household head – The mother/caregiver was asked to state the sex of the person who takes decisions regarding welfare of all household members.

Feeding – Introduction of breastfeeding and weaning practices and times feed to children assessed by interviewing mother/caregiver to all children.

### Indicators and cut-offs

Weight for height - expressed in Z score - is the most appropriate indicator for quantifying wasting in a population during an emergency. However, the two modes of expression in the table below were used for presentation of results.

Nutritional status	Weight for Height in Z-score	Weight for Height in % of Median
Global acute malnutrition	< -2 or oedema	< 80% or oedema
Severe acute malnutrition	< -3 or oedema	< 70% or oedema

### Data preparation and analysis

During the data collection phase, each questionnaire was thoroughly checked by the field supervisors for omissions, inappropriate responses and for unlikely weight for height measurements. Survey Co-ordinator travelled to enumeration areas making spot checks and ensuring that the methodology was standardised.

Pre-coded responses were entered into the EPI Info version 6.0 software programme for data analysis. Confidence intervals were used to test for significant differences between prevalence of malnutrition among different age and food economy groups.

## 6. PRESENTATION OF THE SURVEY RESULTS

### Age and gender distribution of children surveyed

The age and gender distribution of the sample is provided in Tale 1. Information on actual demographic patterns by year is not available for Somalia. Out of 907 children examined during the survey, 485 (or 53.5%) were boys and 422 (or 46.5%) were girls, with a sex ratio of 1.1. There were slightly fewer females than males in the sample but the difference is insignificant indicating an unbiased sample selection.

**Table 1: Distribution of sample by age and sex, Kansadere district November 2001**

Age in months	Boys		Girls		Total		Sex ratio
	No.	%	No.	%	No.	%	
6 – 11	66	58	47	42	113	12	1.4
12 – 23	85	53	74	47	159	18	1.1
24– 35	110	56	87	44	197	22	1.3
36– 47	105	54	90	46	195	21	1.2
48– 59	119	49	124	51	243	27	0.9
<b>Total</b>	<b>485</b>	<b>53.5</b>	<b>422</b>	<b>46.5</b>	<b>907</b>	<b>100</b>	<b>1.1</b>

## Anthropometric analysis

The results of anthropometric analysis were obtained by using weight for height expressed in Z-score and percentage of the median of the reference population.

**Table 3: Distribution of malnutrition in Z-score, Kansadere district November 2001**

Age	6-59 months	6-36 months
Global acute malnutrition	18.4% (95% CI: 15.2% - 22.4%)	22.3% (95% CI: 17.9% - 27.8%)
Severe acute malnutrition	3.0% (95% CI: 2.0% - 4.4%)	4.0% (95% CI: 2.6% - 6.0%)

**Table 4: Distribution of malnutrition as percentage of the Median, Kansadere district November 2001**

Age	6-59 months	6-36 months
Global acute malnutrition	14.0% (95% CI: 11.1% - 17.6%)	17.6% (95% CI: 13.6% - 22.7%)
Severe acute malnutrition	2.8% (95% CI: 1.8% - 4.1%)	3.3% (95% CI: 2.0% - 5.2%)

There was no significant difference between the prevalence of malnutrition in children 6-36 months and those aged 6-59 months. ( $X^2 = 0.00$ ,  $p = 1.0$ ).

**Table 5: Distribution according to weight/height index in Z-score or presence of oedema by age 6-59 month old children, Kansadere district, November 2001**

Age group Months	Total children Number	≥ -2 Z-score		< -2 and ≥ -3 Z-score or oedema		< -3 Z-score or oedema	
		No.	%	No.	%	No.	%
6 – 11	113	84	74	24	21	5	4
12 – 23	159	116	73	33	21	10	6
24– 35	197	161	82	31	16	5	2
36– 47	195	168	86	24	12	3	2
48– 59	243	211	87	28	11	4	2
<b>Total</b>	<b>907</b>	<b>740</b>	<b>81.6</b>	<b>140</b>	<b>15.4</b>	<b>27</b>	<b>3.0</b>

**Table 6: Distribution according to weight/height index in Z-score or presence of oedema by Food Economy Group, Kansadere district, November 2001**

Food Economy Group	Total children No. (%)	> -2 Z-score		< -2 and ≥ -3 Z-score		< -3 Z-score or oedema	
		No.	%	No.	%	No.	%
Farming and Livestock	486 (53.6%)	394	81	76	15.6	16	3.3
Farming	331 (36.5%)	270	81.6	52	15.7	9	2.7
Urban	90 (9.9%)	76	84.4	12	13.3	2	2.2
<b>Total</b>	<b>907 (100%)</b>	<b>740</b>	<b>81.6</b>	<b>140</b>	<b>15.4</b>	<b>27</b>	<b>3.0</b>

More than 53% of the child population assessed were from farming and livestock, more than 36% from farming, and almost 10% from urban food economy groups. It appears that more children are affected in farming than in farming and livestock and urban food economy group. It is interesting to note that this

percentage declines up to almost 19%, 18% and 15% among farming, agro-pastoralist (farming + livestock) and urban children, respectively.

**Table 7: Distribution according to incidence of Diarrhoea and ARI, measles vaccination and Vitamin A supplementation status by age, Kansadere district, November 2001**

Age group Months	Total	Diarrhoea In last two weeks		ARI in last two weeks		Malaria in last two weeks		Measles cases in last one month		Measles vaccination s		Vit A Supplementati on in last 6 months	
		No.	No.	%	No.	%	No.	%	No.	%	No.	%	No.
6 – 11	113	38	34	35	27	39	35	3	3	18	16	74	65
12 – 23	159	62	39	53	33	59	37	6	4	71	45	111	70
24– 35	197	59	30	60	30	56	28	9	5	56	28	129	65
36– 47	195	48	25	34	17	48	25	15	8	52	27	112	57
48– 59	243	31	13	55	23	66	27	18	7	59	24	115	47
<b>Total</b>	<b>907</b>	<b>238</b>	<b>26</b>	<b>237</b>	<b>26</b>	<b>268</b>	<b>30</b>	<b>51</b>	<b>5.6</b>	<b>256</b>	<b>28</b>	<b>541</b>	<b>60</b>

The overall incidence of diarrhoea, ARI and malaria among under-fives was 26%, 26% and 30% respectively with high episodes observed in the first three years of age. A total of 35%, 29% and 36% of the malnourished children had diarrhoea, ARI and Malaria respectively. Diarrhoea and Malaria were found to be significantly associated with wasting in children ( $p < 0.01$ ).

Records on under-fives cards and mother's recall were used to determine coverage of measles vaccination. For the six-month period prior to the survey, measles immunisation coverage was 28% and 60% of children had received Vitamin A supplementation. The result of measles immunisation is very low due to lack of immunisation services in Ufurow area that claimed to be a separate district demanding to have immunisation services free from Kansadere district.

**Table 8: Distribution of Sex of Household Head and Residential Status by Food Economy Group**

Sex of Household Head	Urban	Farming	Farming + Livestock	Total
Female headed households	8(16%)	13(7%)	29 (9%)	50 (9%)
Male headed households	42 (84%)	173(93%)	289 (91%)	504 (91%)
Total	50 (100%)	186(100%)	318 (100%)	554 (100%)
<b>Resident Status of Household Head</b>				
Resident Status of Household Head	49 (98%)	184(99%)	318(100%)	551 (99%)
Returnees	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Displaced	1 (2%)	2 (1%)	0 (16%)	3(1%)
Total	50 (100%)	186 (100%)	318 (100%)	554 (100%)
<b>Two main source of income</b>				
Sale of crops	5 (10%)	138(74%)	240(76%)	383 (69.3%)
Casual work	21 (42%)	41(22%)	58 (18%)	120 (21.6%)
<b>Two main source of food</b>				
Crop production	43 (86%)	180(97%)	279(88%)	502 (91%)

Purchases	2 (4%)	1 (0.5%)	31 (10%)	34 (6%)
<b>Two main coping strategies during food shortage</b>				
Casual work	3 (6%)	101(54%)	170(53%)	274 (49.5%)
Sale of livestock	5 (10%)	36(19%)	96 (30%)	137 (24.7%)
<b>Two main source of drinking water</b>				
Open hand dug well	1 (2%)	96(52%)	151(47.5%)	248 (44.8%)
Bore well	46 (92%)	16(9%)	126 (40%)	188 (33.9%)
<b>Two main source of treatment when a child is sick</b>				
Private clinic/Pharmacy	30 (61%)	117(63%)	137 (43%)	284 (51.4%)
Public health facility	16 (33%)	25(13%)	87 (27%)	128 (23%)

## Background Information (from qualitative questionnaires)

### - *Child feeding practices*

The survey has depicted that more than 2% of children are breastfed less than 6 months, more than 4% are breastfed between 6-11 months, and more than 30% are breastfed between 12-18 months while almost 63% are breastfed more than 18 months. Almost 96% of children were introduced food other than milk before 4 months, slightly less than 4% were introduced between 4-6 months while 0.4% were introduced after 6 months of age due to lack of other food to the families. Early weaning food to babies remain a major cause to childhood infectious diseases. Slightly more than 2% of children are fed once a day, a bit more than 18% are fed twice a day while other 79% are fed three and more times a day.

Additional information collected through focussed discussions with caretakers indicates that the first thing to be given to babies is mother breast milk and water with sugar. The chlostrum is also given to babies helping mother's health condition in terms of contraction and shrinking of the uterus.

Usually mothers breastfeed 5 times between morning and night and 3 times in the night. When mother is away, elder sister or grandmother feed babies whatever is available (e.g. milk, porridge, tea with milk or sugar solution) with a cup or the like. Children are not breastfed when mother is pregnant or sick. Usually, breastfeeding continues up to 24 months unless special circumstances stop breastfeeding.

Many babies start getting food other than breast milk before at the age of 4 months. Mothers and elder sister usually feed the children less than three years.

Sorghum porridge is usually prepared for infants and is given with a cup or some times with spoon. Infants are given between 1/8 - 1/4 litres of porridge at one feed with a cup 5-6 times/day. While ingredients and composition of the porridge vary and depends on the household's economic status, porridge is usually prepared by sorghum with ghee or sesame oil or vegetable oil, sugar and milk. However, currently, due to the prevailing hardship, only sorghum and milk are used (or sometime even without milk).

On a normal day, families consume three meals. But when the situation becomes stressful, they take only twice, or even once a day. In the district, sorghum, meat and milk are usual staples. However, currently, it seems that many families are not able to afford to take them all.

- *Child care practices*

Additional qualitative information collected indicated that mothers do not have enough time to be with their children. This is because, in most cases, mothers are the main bread-earners of the households. Besides, they are the ones who do fetching of water, collection of fire wood and cooking. Economic hardship will certainly affect negatively on this further.

When in pregnancy, Somali women prefer some particular food with belief that if they do not get what they want, the baby will have a mark of the thing they wanted on the baby. Another belief is that if they eat good quality food such as liver and milk, the baby will grow big making delivery difficult. These may lead pregnant women to have less than optimum, if not non-proper, diet during pregnancy. In contrast, during breastfeed period, mother wants to eat more and good quality food if she can afford. In case of sickness mother will look for soft food.

Both for distribution of food and provision of health care, priority is given to the youngest child. Somalis believe that girls grow faster than boys because that girls have easier access to food and boys move and rove too much wasting energy.

Mothers have limited access to external information relating good childcare practices, while there are effective family support within the households and community for childcare and stimulation. Father and mother plan together, for instance, who go to the farm, who to look after livestock and who look after children. When additional manpower is needed, parents request from the Koranic teacher to release one or two of their children in school and assign some of the jobs in order to find at least one person for childcare.

- *Health environment*

There are one MCH run by SRCS and many private pharmacies in the area. All households have access to the MCH. During rainy seasons there are lot of mosquitoes and flies in the area.

- *General food consumption*

Sorghum, sugar, milk, meat, oil, ghee, flower, rice and beans are widely consumed in the area. And in crisis situation, sorghum, sugar and flower are given priority. Pasta is also consumed. Households in this area normally obtain their food by purchasing. While all items change their prices depending on socio-economic and climatic situation, imported food items specially sugar (which is very much valued by Somali) and pasta are the items that greatly vary in price, especially during the mansoons when sea transport become difficult and during rainy seasons when road condition limits the in-land transportation.

In times of severe food shortage they try to find food even by selling the small assets they have and/or by adults' going to other areas to find job. Households' consumption patterns depend on food availability. While normally three meals are taken by day, in case of food shortage, they eat only twice. Households which depend on farming practices or casual labour as the source of income have limited coping mechanism during food shortage.

### **Crop production**

Major food crops grown in the area are sorghum, maize and beans. El Nino has dramatically changed the ecosystem of the region. The major crop production system is rain fed production system. Depending on household size, cultivated land range varies from 3 to 10 hectares. The mode of cultivation is usually inter-cropping sorghum with beans and monocropping in maize.

Land is communal and the households have the right to use the land; the land becomes private after using. There are exceptional cases that land is used for free of charge for certain period.

Seeds and other planting materials are locally prepared while InterSOS started distributing agricultural tools and seeds since beginning of 2000.

Households use their own families and skills/knowledge. All female and male adult members of the household participate in every activity in the family farm from land preparation to harvesting except threshing and pounding which is confined only to female members of the household.

### **Preservation, processing and trading**

Mostly, sorghum are preserved (by the method called "Bakar") but also other crops such as maize and beans are stored in a similar manner. Sorghum is stored unthreshed in underground pits while maize and beans are stored in drums if available threshed. In a good year, one harvest normally provides each household up to 3 years' of stock for their own consumption. In a bad year, it gives only 3-month stock.

Trading of the crops is usually done with business people from Mogadisho, Kenya and livestock herders both from Kenya and Somalia. Crops are mostly sold in dry seasons for other household purposes like clothes, sugar, medicine etc. The trade however sometime faces problems due to the low market price of crops. This usually happens when many farmers look for a "short-hand" cash immediately after harvest (which is locally called "farm gate price"), when there is an "influx" of food from WFP or CARE at harvest time, and when there is lack of adequate marketing and road accessibility due to either insecurity or some times to rains. In all these cases, pure farmers, who do not have other means of income, are the most affected, but some times agro-pastoralists are affected as well.

Both the civil war and natural disaster like El Nino of 1997/98 and draught had badly affected the crop production in the area. During the war, most of underground stored crops were looted or burnt, while during El Nino the water destroyed underground stored crops.

### **Livestock-economy environment**

Animal husbandry is traditionally practised in the area and livestock and its products are critical means both for household consumption and for trade. Nomads depend on the livestock for their diet (i.e. milk and occasionally meat are taken). They slaughter animals for family consumption especially at such special occasions like festivals, wedding and other ceremonies. Most of the pastoralists' income comes from sale of livestock. Usually, camels are kept for long term survival plan since it resists the thirst and water scarcity, and some times even for prestige, but cattle and sheep are some times sold to meet the other needs of the household.



Lack of rains, disease, lack of genuine drugs and proper treatments or lack of veterinary services, and lack of marketing skills/systems are the major threat for the households who depend largely on livestock. The import ban on the Somali livestock by the Gulf countries imposed more than a year ago remains a major constraint in animal production.

Civil war and inter-clan conflicts have badly affected the animal production in the area since livestock were massively looted or slaughtered by militias and rival groups. Further, all kinds of veterinary services including prophylaxis, treatment of various diseases, licensing and certification were all stopped. As a result, Somali livestock does not meet (or cannot proven to be meeting) the international commercial standards anymore. The conflicts have also restricted the movement of livestock in search of fodder and water.

### **Other economic activities**

Collection and sales of firewood, construction materials and grass as well as provision of casual labour are practised, in addition to small businesses. Many farmers engage in these activities in their "spar" time as a part of coping mechanism. These activities are however not evenly practised in the district. And casual labour and other forms of self-employment tend to be less reliable in securing regular income.

## **7. ANALYSIS OF FINDINGS**

The prevalence of total acute malnutrition in children in Kansadere district (18.4%) appears to be quite high. The previous surveys conducted in the area in June 1995 indicated a global malnutrition of 14%.<sup>1</sup> This increase may have to be attributed to the severe drought situation prevailed in the district at the time of the survey, which has manifested both in water and food shortage, aggravated by successive crop failure in the last three years.

Although the sample was not stratified by the food economy characteristics and the questionnaire was not structured to assess those characteristics of the population, some variations could be observed in the global malnutrition rate amongst the different groups in the district. Farming children seem to be the worst off with almost 19% global and slightly more than 3% severe malnutrition. These percentages decline for agro-pastorlist and urban families up to almost 18% global and slightly less than 3% severe malnutrition, whilst the urban population seems to be better off with a bit more than 15% global malnutrition and slightly more than 2% severe malnutrition.

A total of 35%, 29% and 36% of the malnourished children had diarrhoea, ARI and Malaria respectively. Diarrhoea and Malaria were found to be significantly associated with wasting in children ( $p < 0.01$ ). Of those children with diarrhoea, Malaria and ARI, 79%, 71% and 66% were less than 36 months.

Records on under-fives cards and mother's recall were used to determine coverage of measles vaccination. Measles immunisation coverage was 28% due to lack of immunisation services in Ufurow area that claimed to be a separate district demanding to have immunisation services free from Kansadere district. It is also encouraging that 70% of the children were vaccinated in last six months. A total of 60% of children had received Vitamin A supplementation

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<sup>1</sup> However, these data could not be compared straightforwardly as the surveys in 1996 did not employ the same methodologies. The survey in June 1996 covered Baidoa rural villages and Kansadere district while the UNICEF survey in October 2001 covered only Kansadere district including Ufurow that claims to be a separate district.

Exclusive breastfeeding and sound complementary feeding practices are crucial for enhancing the nutritional and health status of infants and young children. A total of almost 96% of children were introduced food other than breast milk before four months.

Apart from reducing their chances for optimal growth, feeding young children non-breast milk food prepared under unhygienic conditions exposes them to environmental contaminants resulting in frequent diarrhoea episodes and reduced resistance to other common infections. It is not surprising therefore that at age 6-23 months, a high proportion (26%) of children were already malnourished while 37% of children less than 23 months had diarrhoea with two weeks prior to the survey.

The adverse practice of holding back food when children are sick and presenting them late at the health facility when home remedies have failed has clear implications for nutrition and well being. Women have poor autonomy over their health seeking behaviour. They must seek permission from their husbands before attending or taking their children to a health facility. With 91% of the households headed by males, any strategies aimed at improving utilisation of health facilities and childcare practices would be meaningless if fathers are not targeted.

The family diet consumed by children at age twelve months is usually simple and monotonous, dictated by local availability and price of foods in the market. Slightly more than 79% of children are fed more than two meals a day. Typical meals contain sorghum and milk sometimes prepared as porridge for children, whilst the diets of adults contain in varying combinations sorghum or maize, meat and cowpeas.

Coping strategies in times of food shortage were very close for both agricultural and agro-pastoralist families with 54% and 53% respectively while for urban families purchasing was the main with 22%. Dietary modifications include reduction in number of meals consumed by the entire household, reduction in the size of sorghum and milk consumed by each member irrespective of age, or dependence on wild foods. From a qualitative standpoint, these diets appear limited in calorific value and micronutrients. Some households supplement income by sale of crops and casual works with 76% in agro-pastoralist, 74% in farming and 10% in urban families while casual work is noted most important for urban families with 42%.

Inadequate access to safe water and poor human excreta disposal of almost 85% remain a major concern in Kansadere district with slightly more than 47% in agro-pastoral and 52% in farming using open hand dug wells although 92% of the urban families have access to improved safe water from UNICEF supported borewells in Kansadere.

The high prevalence of malnutrition in the district is an indication of the fragility of the situation and this has certainly taken a toll at household level in all food economy groups. The problems of food availability and access faced by poor households combined with the high incidence of diseases, poor sanitary practices and limited access to safe water are factors contributing to the high malnutrition rates. These problems must be urgently addressed to prevent the situation from deterioration.

## 8. RECOMMENDATIONS

Recommendations to alleviate the immediate causes of malnutrition such as diseases and inadequate dietary intake are important and urgent in the light of the high prevalence of acute malnutrition in Kansadere district.

A longer-term plan to improve the nutritional status of the population needs to be developed and supported covering improvements in access to improved drinking water and making the outreach services fully functional with close supervision and expansion to uncovered areas in the district or Ufurow area. The plan should also address the need for community based nutrition and health education activities. The main areas of focus should include promoting exclusive breastfeeding, appropriate young child feeding, diversification of diets, and improvements in household hygiene and health care practices with the active participation of pregnant mothers, fathers and other caregivers in order to sustain improvements in the nutrition situation in Kansadere district.

In particular, in the immediate future it is recommended:

- CARE to continue food for work to complement food shortage in the area until good harvest.
- To introduce the supplementary feeding programme and WFP family food rations to malnourished children in Kansadere and Ufurow district (s) to minimise risk of internal displacement in the area.
- To strengthen and support with supportive supervisory visits to health services delivered by IMC in Kansadere and explore possibility of establishing health services in Ufurow area or district.
- To introduce nutrition education promotion in selected areas in Kansadere and Ufurow district (s) to sensitise communities to proper feeding practices and use of locally nutrition food.
- To develop and support a longer-term plan to promote sustained improvement in the nutritional status of the population covering:
- To increase access to improved drinking water in high-risk communities especially in Ufurow area.
- To intensify health and nutrition education activities at the household level to address care concerns, targeting mothers, fathers and other caregivers. The main areas of focus should include promoting exclusive breastfeeding, appropriate young child feeding, diet diversification, and improvements in household hygiene and health care practices.

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## Annex 1. LIST OF LOCATIONS FOR CLUSTERS SELECTION

Locations	Estimated Population	Cumulative population	Cluster
QANSAX DHEERE/WADAJIR	2000	2000	1
Qansaxdheere /Garsor	700	2700	
Qansaxdheere Busley	700	3400	
Qansaxdhere/arotur	500	3900	
Tugarey	400	4300	
Sarta	500	4800	2
Modamode	300	5100	
Wagala	400	5500	
Bakal darey	200	5700	
Modkusow	300	6000	
Mowkubow	400	6400	
B/jadid	400	6800	
Horgoyte	300	7100	
Kabirow	300	7400	
Juqdda	600	8000	3
Harerisalama	400	8400	
Qaylodhere	200	8600	
Alimadaraale	500	9100	
Lowirar	700	9800	
Bulofur	2000	11800	4
Buloelay	500	12300	
Jafey	500	12800	
Bulojadid	400	13200	
Jafey	550	13750	
Dure Emed	1100	14850	5
Qasaley	600	15450	
Birigey	1000	16450	
Bulosheg	200	16650	
Bulolowiiley	300	16950	
Buloreydab	250	17200	
Tiirka	300	17500	
Aligalle	250	17750	
Buloabig	600	18350	6
Jafey	300	18650	
Boojji	750	19400	
Dhowiita	850	20250	
Welborow	300	20550	
Edaim Qaboobe	300	20850	
Elabey	600	21450	7
Hawalmakay	500	21950	
Waro	800	22750	
Eesow	600	23350	
Arrotuur	200	23550	
Weeldhen	200	23750	

Bulohagar	200	23950	
Eleenyoole	400	24350	
Mayow	500	24850	<b>8</b>
Hassan Muumin	500	25350	
Bunbegay	800	26150	
Elgeddow/timir	900	27050	
Makidhegale	500	27550	
Eldhere	500	28050	<b>9</b>
Elgalool	400	28450	
Bulomadbarre	500	28950	
Kobin	2400	31350	<b>10</b>
Qasaga	300	31650	
Hawalmaynuna	700	32350	
Hareerisiin	500	32850	
Arooswiine	500	33350	
Jirey	500	33850	
wowti	300	34150	
Awjike	700	34850	<b>11</b>
Arosmakay	500	35350	
Sharifaydaruus	400	35750	
Hawenigaab	600	36350	
Barow	600	36950	
Midhegne	300	37250	
Bulotugar	200	37450	
Korunbod	1500	38950	<b>12</b>
Aliaden	400	39350	
Bulogudaley	300	39650	
Deg-garas	400	40050	
Isgeddo	400	40450	
Bulo Ghedudo	500	40950	
Mogor	300	41250	
Bulodhuji	300	41550	<b>13</b>
Galmagale	600	42150	
Bulodhato	500	42650	
Buholow	400	43050	
Mad ebdi	400	43450	
Beled Amin	500	43950	
Bulokashito	300	44250	
Manyaw	350	44600	
Moddoy	300	44900	<b>14</b>
Buloqerimey	400	45300	
Bulogomor	1000	46300	
Bulomundul	800	47100	
Array	200	47300	
Welmalas	600	47900	
Durey	700	48600	<b>15</b>
Wayante	600	49200	
Hawalbarbare	2200	51400	<b>16</b>
Bulofuurto	800	52200	
Gadudodhunti	700	52900	

Goymaar	350	53250	
Madihool	300	53550	
Hussein Kallar	300	53850	
Maguurte	300	54150	
Ohiye	450	54600	
Bakaley	300	54900	<b>17</b>
Adad dhooble	500	55400	
Gawanow	300	55700	
Buloburow	200	55900	
Weelwaanre	400	56300	
Garasfuur	250	56550	
Buloees	500	57050	
Bulohadama	400	57450	
Bulomadbaliiko	300	57750	
Bulogomor	300	58050	<b>18</b>
Buloqulanjo	400	58450	
Deebweyne	400	58850	
Bulowariri	450	59300	
Haranka	300	59600	
Bulonuragab	500	60100	
Mayweydiyas	500	60600	
Baas ma arke	300	60900	
Buuloqaraar	350	61250	
Mogay	300	61550	<b>19</b>
Lowiiley	400	61950	
B/a/amey	400	62350	
Bulobasey	300	62650	
Dulinti	400	63050	
Mad/a/dhubow	470	63520	
Eesmundulle	300	63820	
Korrey	300	64120	
Bulohassanjiir	200	64320	
Bulomoordi	400	64720	<b>20</b>
Moddoy	750	65470	
Elbay	600	66070	
Bulorille	500	66570	
Bulosheegow	200	66770	
Sheikmadumurey	300	67070	
Buloedin	300	67370	
Bulodedeb	300	67670	
Buloir	500	68170	<b>21</b>
Benlowyare	500	68670	
Qaddisaleb	250	68920	
Hilowleokash	250	69170	
Shawey	350	69520	
Bulogaras	200	69720	
Bulobusta	400	70120	
Bulosokor	400	70520	
Lafale	400	70920	
Fargooy	500	71420	<b>22</b>

Miirisigaabow	200	71620	
Waryaroy	200	71820	
Madebdi	200	72020	
Aligalle	400	72420	
Ufurow	2000	74420	
Ufurow	4000	78420	<b>23-24</b>
Misejid	200	78620	
Bulohareri	300	78920	
Galootur	200	79120	
Warbisig	200	79320	
Qasaley	350	79670	
Bulobarako	400	80070	
Bulofurarrow	500	80570	
Mowlegalool	200	80770	
Minkalawat	500	81270	
Bulofur somow	400	81670	<b>25</b>
Buuloaddey	900	82570	
Bulogaras	300	82870	
Buloqatariyal	500	83370	
Awdherow	400	83770	
Buloqasim	400	84170	
Bulohagar	350	84520	
Garsafurka	400	84920	<b>26</b>
Doyrebe	600	85520	
Digadde	300	85820	
Hawalrobay	500	86320	
Moroerin	300	86620	
Bulouskudhow	200	86820	
Garaarta	600	87420	
Bideerey	500	87920	
Mushkaayarey	400	88320	<b>27</b>
Bulojadiid	400	88720	
Bulogalool	300	89020	
Bulobiyoley	250	89270	
Bulomadkorsaar	200	89470	
Bulotufka	300	89770	
Bunbeegay	1000	90770	
Mubarakwiin	900	91670	<b>28</b>
Mubarakyarey	300	91970	
Weldhen	300	92270	
Garoorey	300	92570	
Mowlitowski	500	93070	
Hagirey	300	93370	
Hireerihuf	200	93570	
Shidkus	300	93870	
Shegaley	300	94170	
Daarta	200	94370	
Dulinti	200	94570	
Masiirka	200	94770	
Lowisab	200	94970	<b>29</b>



Garbagab	300	95270	
Towsiiley	300	95570	
Birjibis	300	95870	
Kurtunbusle	300	96170	
Malmalyare	200	96370	
Midhayto	200	96570	
Kaaysiney	300	96870	
Lowigaduud	200	97070	
Bulotitoorow	250	97320	
Shanjidood	300	97620	
Tugerhoos	900	98520	<b>30</b>
Mowligadud	300	98820	
Shalgoosey	300	99120	
Buloabukar	600	99720	
Buloubreyinmadmursal	300	100020	
Buloadenguudweyne	200	100220	
Bulohaghialiyow	200	100420	
<b>TOTAL</b>	<b>100420</b>		

**Sampling Interval** 3347  
**Random Selection** 1096

**Annex 2. TRADITIONAL CALENDAR FOR NUTRITION SURVEY**

Month	Events	1996	1997	1998	1999	2000	2001
Jan.	Beginning of Jiilal		57 Soonfur	45 Soonfur	33 Soonfur	21 Soonfur	9 Soonfur
Feb.	Mid of Jiilal		56 Siditaal	44 Siditaal	32 Siditaal	20 Siditaal	8 Siditaal
Mar.	End of Jiilal		55 Arafo/Dul-Xaj	43 Arafo/Dul-Xaj	31 Arafo/Dul-Xaj	19 Arafo/Dul-Xaj	7 Arafo/Dul-Xaj
Apr.	Beginning of Gu'		54 Sako	42 Sako	30 Sako	18 Sako	6 Sako
May	Mid of Gu'		53 Safar	41 Safar	29 Safar	17 Safar	5 Safar
Jun.	End of Gu'		52 Mawliid	40 Mawliid	28 Mawliid	16 Mawliid	4 Mawliid
Jul.	Beginning of Xagaa		51 Malmadoone	39 Malmadoone	27 Malmadoone	15 Malmadoone	3 Malmadoone
Aug.	Mid of Xagaa		50 Jamadul-Awal	38 Jamadul-Awal	26 Jamadul-Awal	14 Jamadul-Awal	2 Jamadul-Awal
Sep.	End of Xagaa		49 Jamadul-Akhir	37 Jamadul-Akhir	25 Jamadul-Akhir	13 Jamadul-Akhir	1 Jamadul-Akhir
Oct.	Beginning of Deyr		48 Rajab	36 Rajab	24 Rajab	12 Rajab	
Nov.	Mid of Deyr	59 Shacbaan	47 Shacbaan	35 Shacbaan	23 Shacbaan	11 Shacbaan	
Dec.	End of Deyr	58 Ramadan	46 Ramadan	34 Ramadan	22 Ramadan	10 Ramadan	

Jiilal

GU'

Xagaa

Deyr

